NOVA SCOTIA
Transportation and Public Works

2002 Annual Motor Vehicle Collision Report

Table of Contents

Table of Contents..... 2

Introduction 3

2002 Collision Summary 4

Demographics..... 5

Collisions by Severity 5

Personal Injuries 6

Fatal Collisions & Fatalities 6

Pedestrians 7

Bicyclists 7

Alcohol Involvement 8

Commercial Vehicles 8

Driver Age 9

Urban vs Rural Collisions 11

Collisions by County 11

Urban vs Rural by County 13

Construction Related Collisions 14

Contributing Factors 15

Crunching the Numbers..... 18

Appendix

A - Drivers Involved in Collisions per 100 Licensed Drivers by Age Group 19

B - Drivers Involved in Injury & Fatal Collisions per 100 Licensed Drivers by Age Group 19

C – Definitions 20

Cover photo – Highway 101 / Highway 102 Interchange between Bedford and Lower Sackville taken from Bedford By-pass overpass looking southerly along Highway 102 by Doug Smith.

106-04754/

Introduction

The 2002 Annual Motor Vehicle Collision Report reviews Nova Scotia's motor vehicle collision experience for the calendar year 2002. It contains statistics relating to road traffic collisions—property damage, injury, and fatal—that occurred in the province. The report shows the principal factors contributing to road collisions, injuries, and deaths. It highlights trends in the number and severity of road traffic collisions by comparing data to previous years.

We use this data to identify trends and highlight areas where the Department of Transportation and Public Works, the Province of Nova Scotia, and police and municipal agencies should concentrate resources to improve safety for the motoring public. More specifically, we use it to

- develop highway safety projects such as education, enforcement, and communications campaigns
- identify high collision road locations so changes can be made to reduce the number of collisions
- develop expansion and twinning programs for 100-series highways
- prioritize funding for future maintenance projects
- identify possible legislative changes
- identify where further research is required

We also use this data to promote a co-coordinated and proactive approach to road safety with municipal governments and enforcement agencies. While the Province of Nova Scotia maintains 90 per cent of the road network in Nova Scotia, the majority of collisions occur on the 10 per cent of the road network controlled by municipalities.

2002 Collision Summary

- Collisions: In 2002 there were 13,872 reported motor vehicle collisions in Nova Scotia which represents a collision every 38 minutes or 38 collisions per day. The 2002 total is down 4 per cent from 2001 and is the lowest number of collisions experienced in 30 years.

- Fatalities: There was 1 person killed every 4 days in motor vehicle collisions. The 88 fatalities are a 10 per cent increase over the 80 fatalities in 2001. The 2002 total number of fatalities is approximately equal to the previous 5-year average.

- Injuries: There were 16 people injured each day in 2002. The total personal injuries were 5980, which included 385 (6 per cent) serious injuries. The total personal injuries are the lowest in over 10 years. The 2002 serious injuries are up slightly over 2000 and 2001, but is lower than any other recorded year.

- Urban/rural: An urban environment accounted for 65 per cent of all collisions, 32 per cent occurred in rural areas, and 3 per cent were not coded.

- Pedestrians: The number of pedestrian collisions of 400 was up 6 per cent from the 2001 total of 378. There were 33 pedestrians seriously injured both in 2002 and in 2001. The 12 pedestrian fatalities in 2002 is up significantly from the 2001 fatalities of 7.

- Alcohol: The total number of alcohol-related collisions in 2002 was 490, down 10 per cent from the 2001 total of 545. The 2002 figure is the lowest number of alcohol-related collisions on record. However, the 2002 alcohol-related fatalities of 30 is up 20 per cent from the 2001 figure of 25. In fact, it is the highest number since 1998.

- Contributing factors: The leading first contributing factor, when considering all collisions, at 48 per cent is driver inattention/distraction. Alcohol involvement is the leading first contributing factor in fatal collisions at 32 per cent.

- Month: December was the "leading" month with 10 per cent of the collisions, while April experienced the least number at 7 per cent.

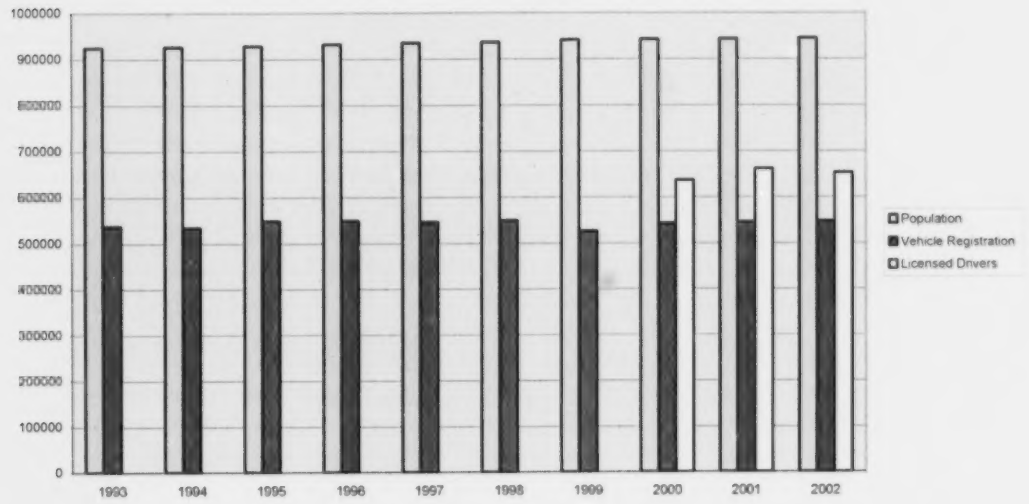
- Day: Fridays had the highest percentage of collisions at 18 per cent, Sundays the lowest at 10 per cent.

- Hour: The hour between 5 and 6 am accounted for only 1 per cent of all collisions, while the hour from 4 to 5 pm accounted for the highest at 8 per cent.

Nova Scotia Demographics

The population and the number of registered vehicles in Nova Scotia have been relatively stable for the past 10 years. In 2002 the population was about 945,000 and the vehicle registrations about 546,000. There were 652,000 licensed drivers in the Province in 2002. (Figure 1)

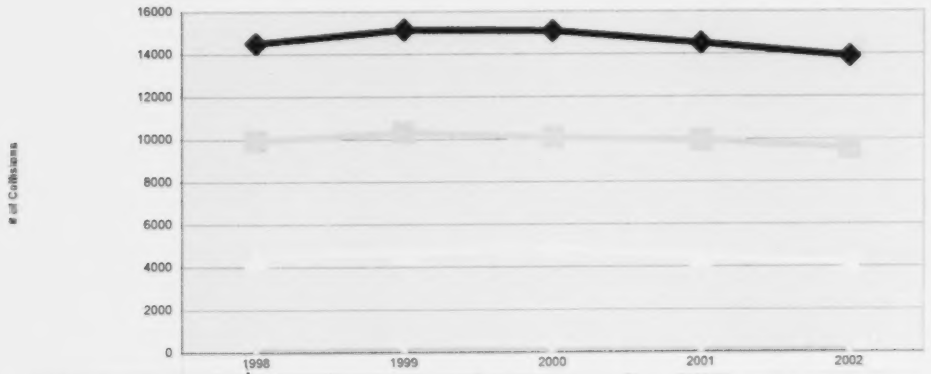
Demographics (Fig. 1)



Collisions by Severity

In 2002, 13,872 motor vehicle collisions were reported on Nova Scotia roads. This number has been gradually declining since a five-year high of 15,138 collisions in 1999. Figure 2 shows the five-year collision history by severity (property damage, injury & fatal).

Five Year Collision History (Fig. 2)

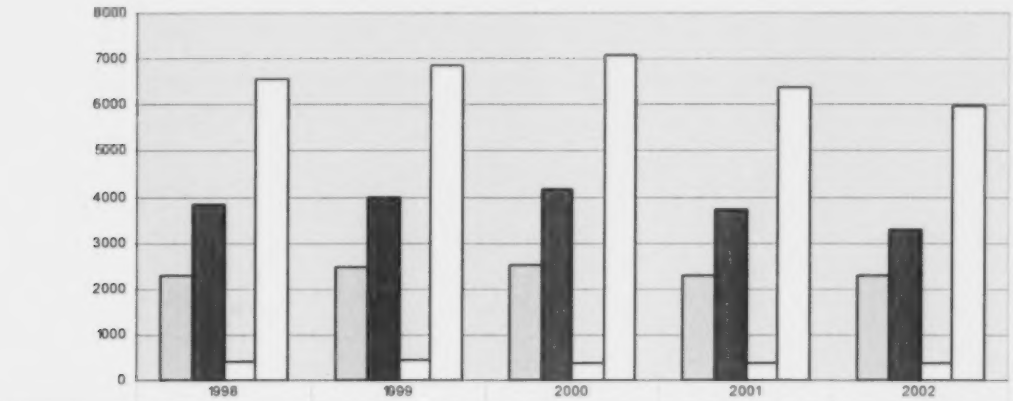


	1998	1999	2000	2001	2002
Total	14484	15138	15073	14499	13872
Property Damage	9915	10318	10076	9945	9566
Injury	4496	4730	4919	4483	4231
Fatal	73	90	78	71	75

Personal Injuries

The 4,231 injury collisions in 2002 resulted in injury to 5,980 individuals. Of these, 385 were classed as serious, which means they required hospitalization. Minor injuries are those that do not require medical treatment. Moderate injuries are those that are treated and released from hospital. Figure 3 shows the five-year trend of injuries on our roads. Total injuries and moderate injuries have shown a decline since a five-year high in 2000 while minor and serious injuries have remained relatively consistent over the past five years.

Personal Injuries (Fig. 3)

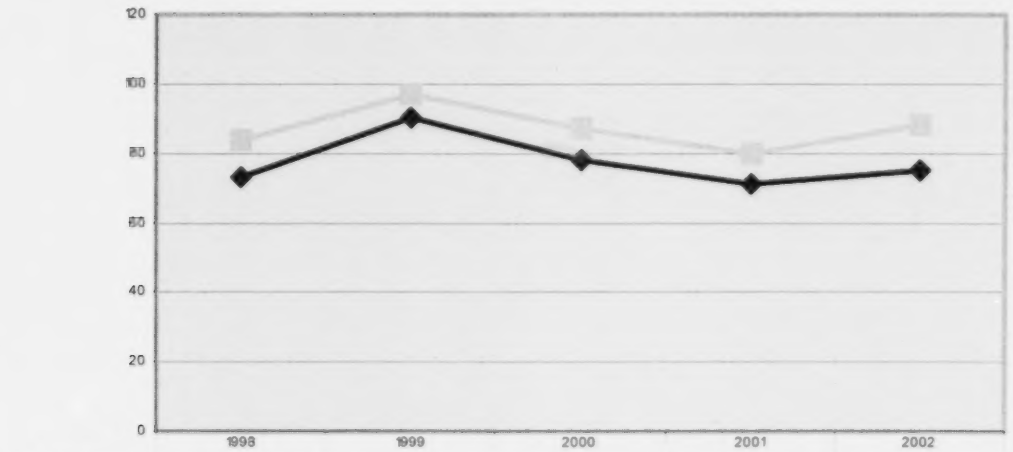


	1998	1999	2000	2001	2002
Minor Injuries	2304	2461	2509	2295	2299
Moderate Injuries	3851	3968	4183	3719	3296
Serious Injuries	392	444	386	372	385
Total Injuries	6547	6873	7078	6386	5980

Fatal Collisions & Fatalities

There were 75 fatal collisions in 2002 resulting in the death of 88 people. Fatal collisions and fatalities have fluctuated over the past five years. The 2002 values are about equal to the five-year average as shown in Figure 4.

Fatal Collisions & Fatalities (Fig. 4)

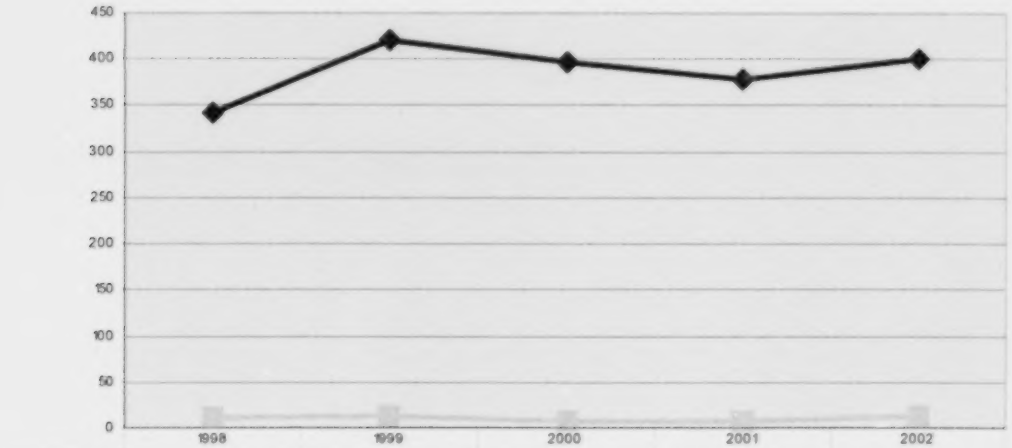


	1998	1999	2000	2001	2002
Fatalities	84	97	87	80	88
Fatal Collisions	73	90	78	71	75

Pedestrians

Pedestrians were involved in 400 collisions in 2002. In these collisions, 12 people died. Both pedestrian collisions and fatalities show an increase over the previous two years. They closely approach the five-year high experienced in 1999 (Figure 5).

Collisions Involving Pedestrians (Fig. 5)

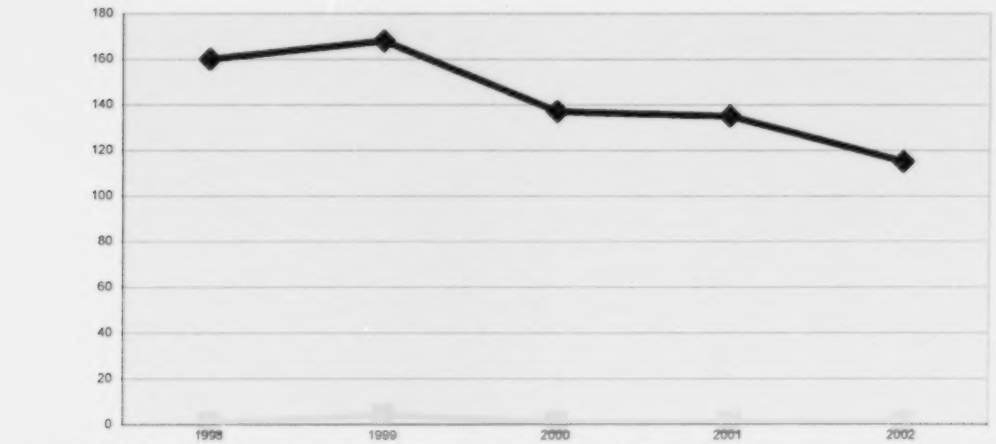


	1998	1999	2000	2001	2002
Collisions	341	421	397	378	400
Fatalities	11	10	8	7	12

Bicyclists

In 2002, 115 collisions involved bicycles. Of these, 4 were serious injuries and one a fatality. Bicycle collisions have declined steadily since 1999, with 2002 representing a five-year low (Figure 6).

Collisions Involving Bicycles (Fig. 6)

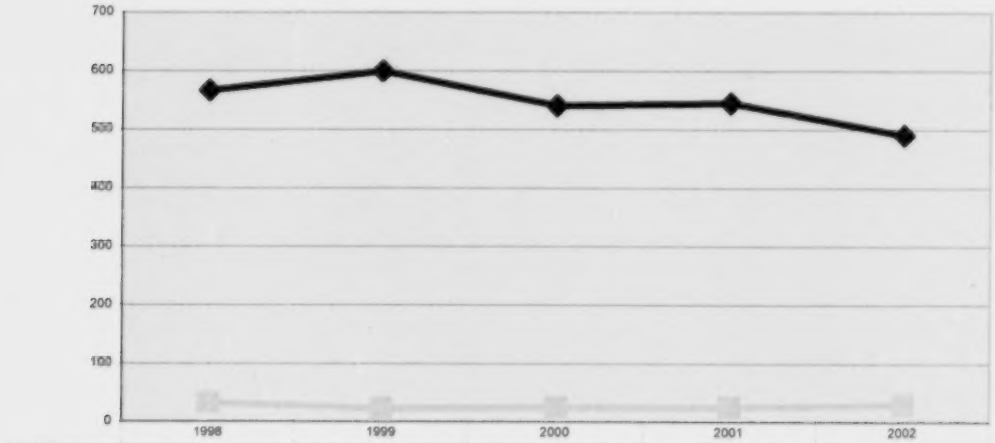


	1998	1999	2000	2001	2002
Collisions	160	168	137	135	115
Fatalities	1	4	1	1	1

Alcohol Involvement

Collisions involving the use of alcohol are at a five-year low of 490. However, the number of fatalities involving the use of alcohol is at a four-year high of 30. Alcohol was a contributing factor in 32% of the 2002 fatalities (Figure 7).

Collisions Involving Alcohol (Fig. 7)

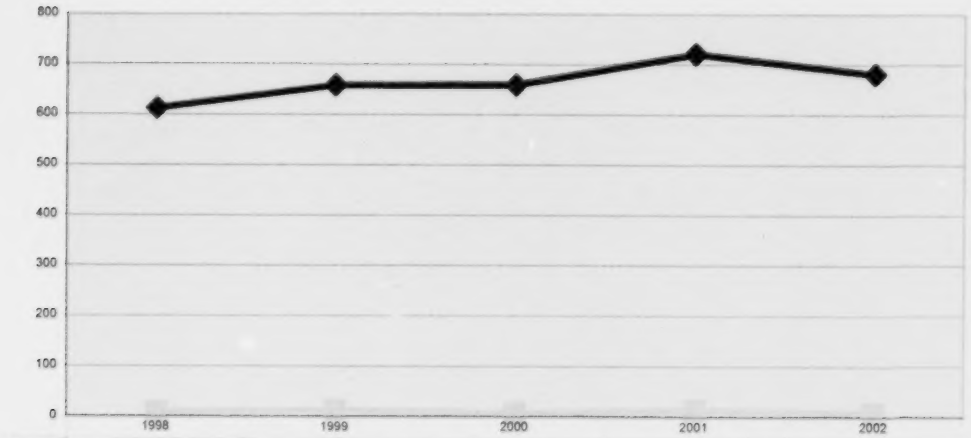


	1998	1999	2000	2001	2002
Collisions	566	599	540	545	490
Fatalities	33	23	25	25	30

Commercial Vehicles

Collisions involving commercial vehicles are down about 5% from the five-year high experienced in 2001. However, they are still up 11% from 1998. The number of commercial vehicle related fatalities has ranged from 7 to 13 since 1998. In 2002 there were 8 such fatalities (Figure 8).

Collisions Involving Commercial Vehicles (Fig. 8)



	1998	1999	2000	2001	2002
Collisions	612	657	658	720	680
Fatalities	9	13	7	13	8

Driver Age

Figure 9 shows the number of drivers involved in collisions by age group. The chart indicates that younger drivers are more prevalent in collisions than older drivers. However, to make fair use of these statistics, we must also take into account the number of licensed drivers for each age group, which we have done in Appendix A. We combined licensed driver data with the number of drivers involved in collisions for similar age groups to calculate a rate for each age group and for each of 2000, 2001, and 2002.

Drivers by Age in Collisions (Fig. 9)

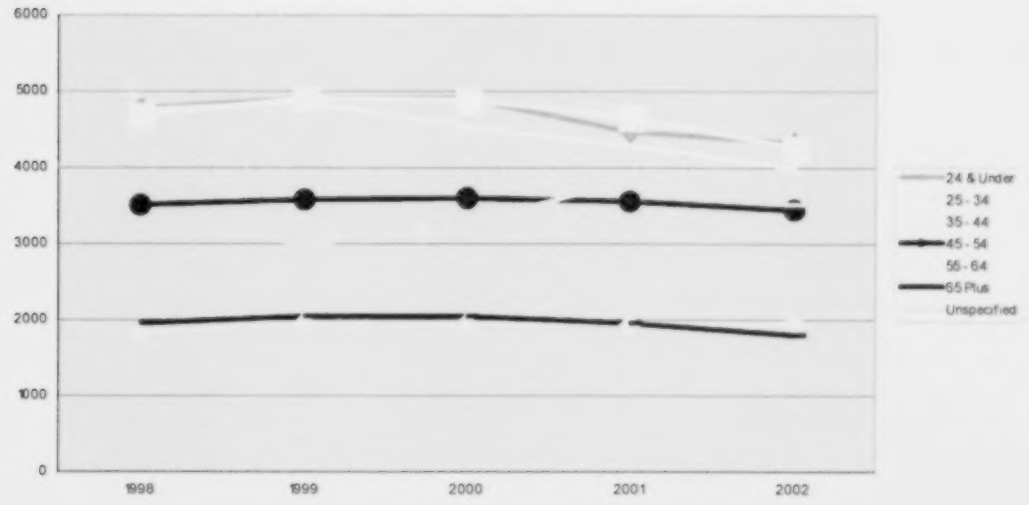
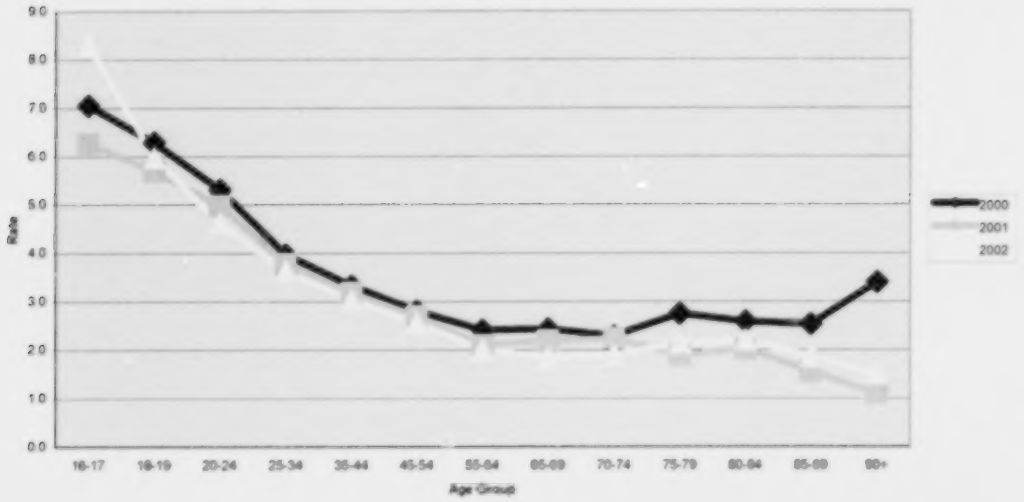


Figure 10 shows the relationship between driver age and involvement in vehicle collisions. It illustrates a general trend towards decreasing involvement in collisions per 100 licensed drivers by age group. The graph clearly indicates the preponderance of young drivers to be involved in collisions in the order of 2 to 3 times the overall average rate. The rate drops as the age increases until an age group of 55–64. The rate then appears to remain stable until 75–79 where it appears to start an upward climb but is not maintained. At this point the graph does not show a uniform trend. This is due to small sample sizes and, perhaps, because many seniors holding licenses choose not to drive and some have medical suspensions.

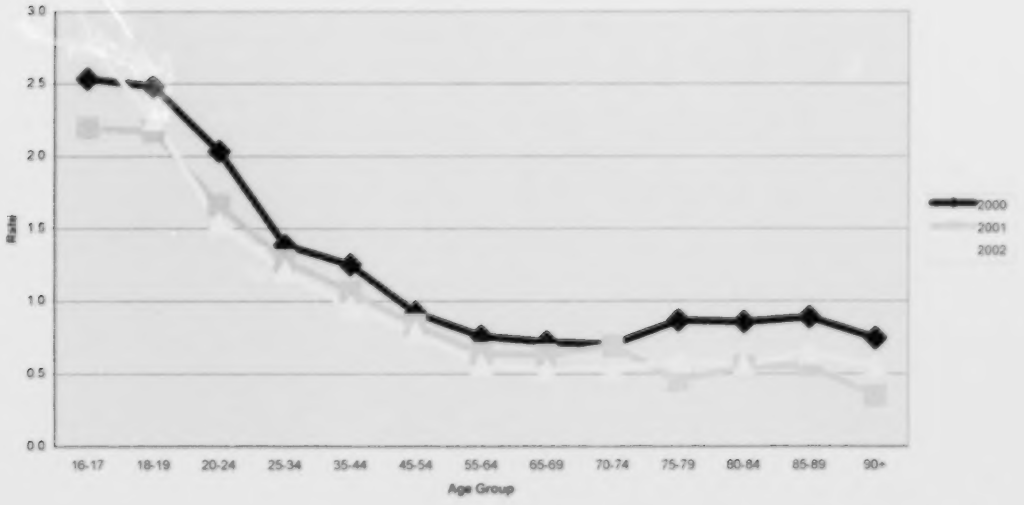
We undertook a similar analysis for drivers involved in injury and fatal collisions. Appendix B shows the total number of licensed drivers by age group and the number of drivers by age group who were involved in injury or fatal collisions. The rate for the three years was calculated to indicate the number of drivers involved in injury and fatal collisions per 100 licensed drivers.

Drivers Involved in Collisions per 100 Licensed Drivers (Fig.10)



Graphs for the rates for each age group for each year are shown on Figure 11. The chart illustrates the same general trend of decreasing involvement as observed in Figure 10. Young drivers in the age groups 16–17 and 18–19 are more likely to be involved in injury and fatal collisions at a rate between 2 and 2.8 times greater than the average. Once again, the rates for the senior age groups is suspect due to the relatively few number of collisions and the uncertainty of the actual number of actively driving seniors

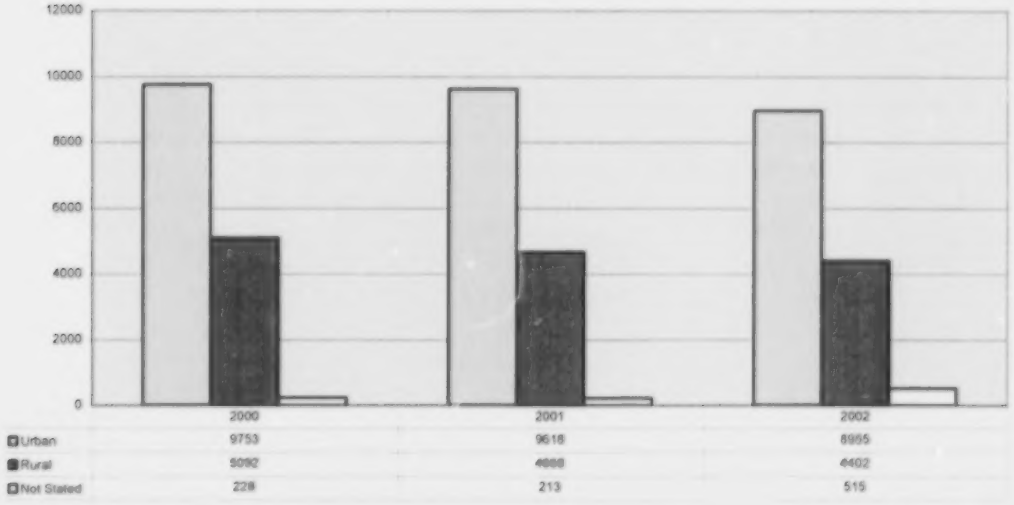
Drivers Involved in Injury & Fatal Collisions per 100 Licensed Drivers (Fig. 11)



Urban vs Rural Collisions

During 2002, 8,955 (65 per cent) collisions occurred in urban areas and 4,402 (32 per cent) in rural areas. This urban/rural split has been relatively constant over the past three years (Figure 12).

Urban vs Rural Collisions (Fig. 12)



Collisions by County

Of the 13,872 collisions in Nova Scotia in 2002, 48 per cent (6,590) occurred in Halifax County (HRM), 11 per cent in Cape Breton County (CBRM), and 6 per cent in Colchester County. The geographical distribution of collisions across the province is shown in Table 1 and Figures 13 and 14.

Table 1

County	PDO	Injury	Fatal	Total
Annapolis	122	81	1	204
Antigonish	192	86	5	283
Cape Breton	861	602	10	1473
Colchester	574	244	3	821
Cumberland	307	138	3	448
Digby	149	71	6	226
Guysborough	60	16	0	76
Halifax	4804	1770	16	6590
Hants	314	191	7	512
Inverness	224	105	3	332
Kings	460	268	7	735
Lunenburg	455	198	2	655
Pictou	444	191	6	641
Queens	86	57	0	143
Richmond	62	39	0	101
Shelburne	122	47	2	171
Victoria	85	36	3	124
Yarmouth	245	91	1	337
Total	9566	4231	75	13872

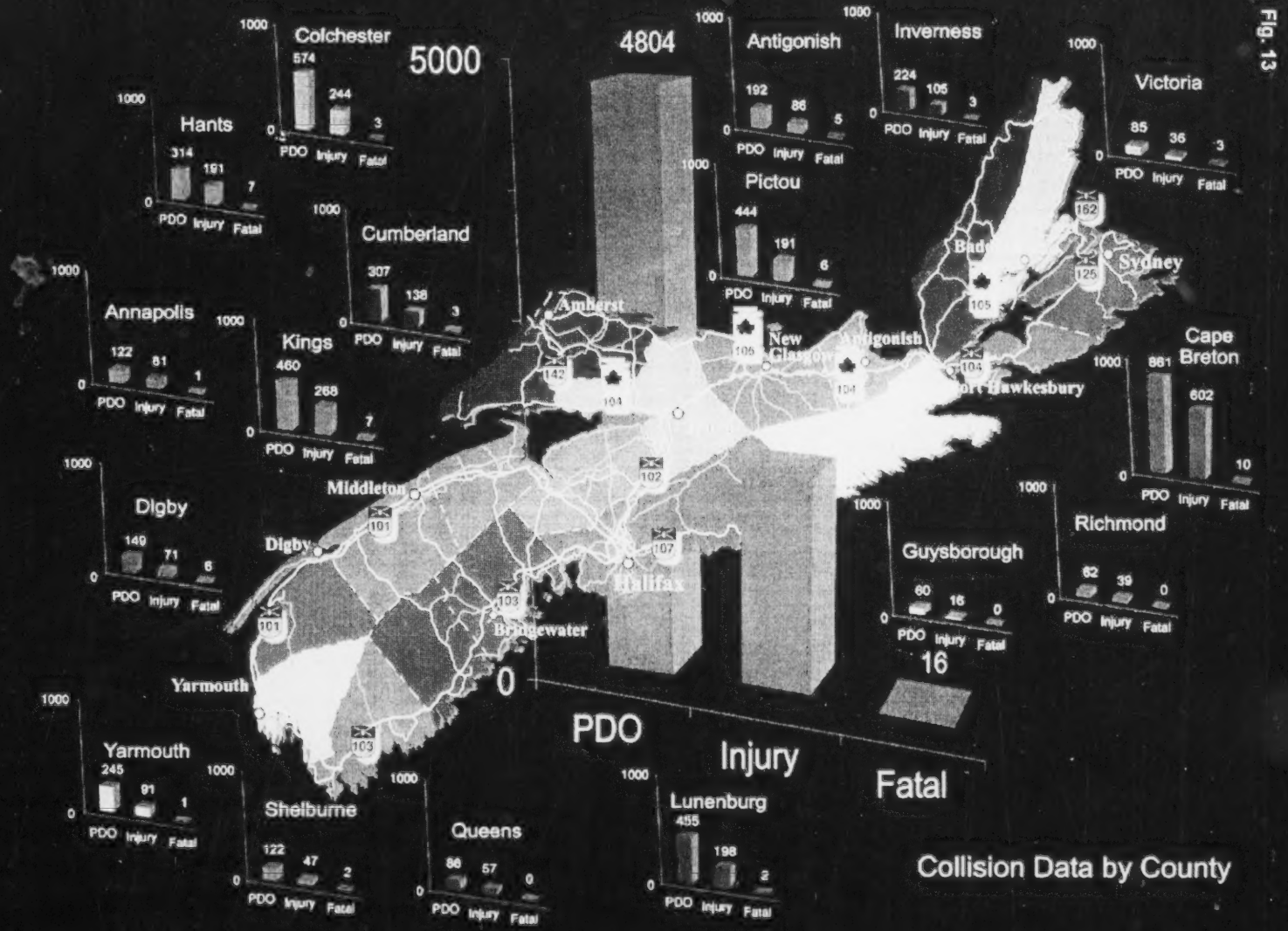

Colchester
574
244
3
5000
4804
Antigonish
192
86
5
Inverness
224
105
3
Victoria
85
36
3
Hants
314
191
7
Pictou
444
191
6
Cumberland
307
138
3
Annapolis
122
81
1
Kings
460
268
7
Cape Breton
881
602
10
Digby
149
71
6
Richmond
82
39
0
Guysborough
60
16
0
16
Yarmouth
245
91
1
Shelburne
122
47
2
Queens
86
57
0
Lunenburg
455
198
2
PDO
Injury
Fatal
Amherst
Middleton
Digby
Yarmouth
Bridgewater
Halifax
New Glasgow
Antigonish
Sydney
Port Hawkesbury
Collision Data by County

Fig. 13

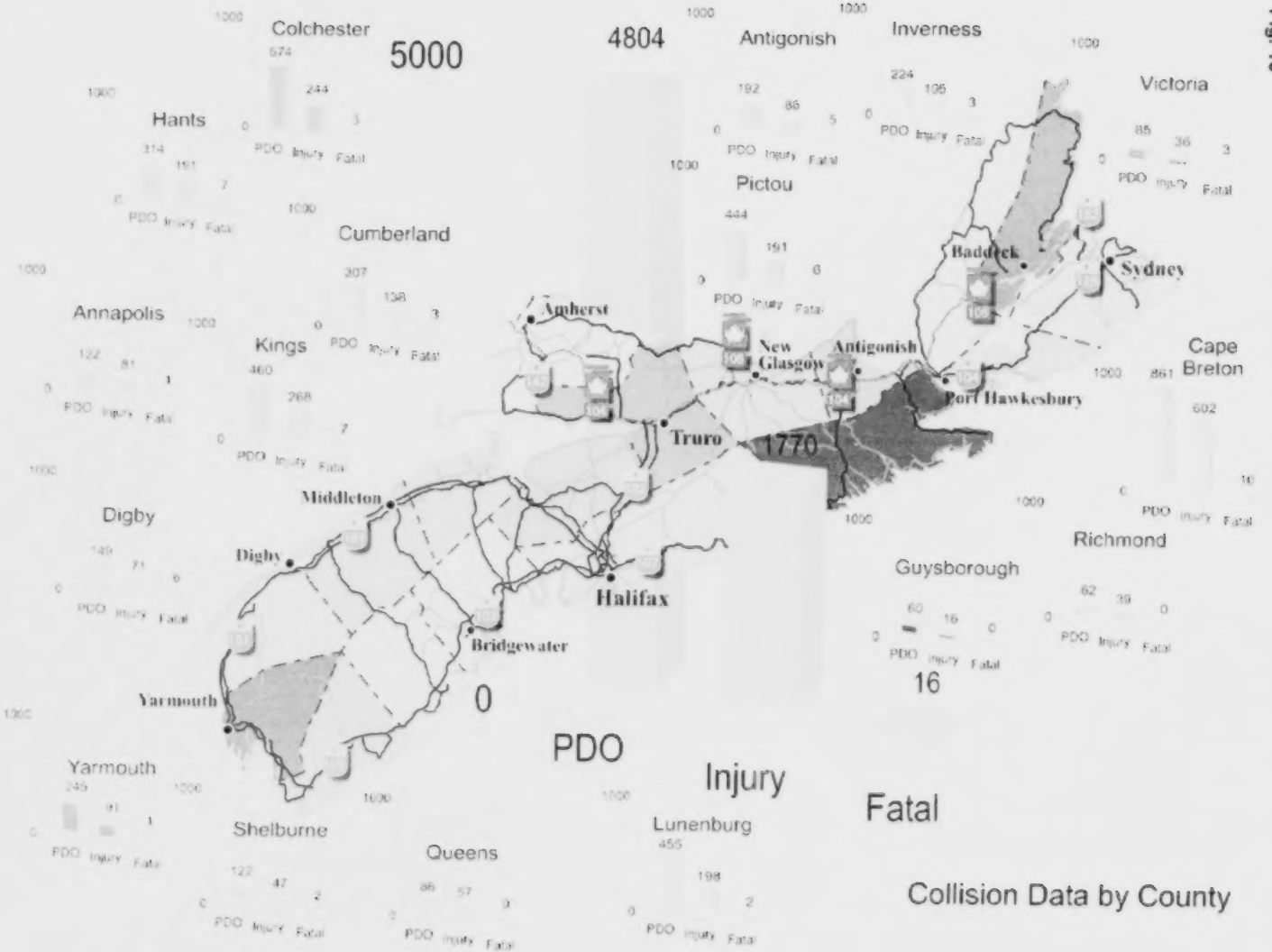
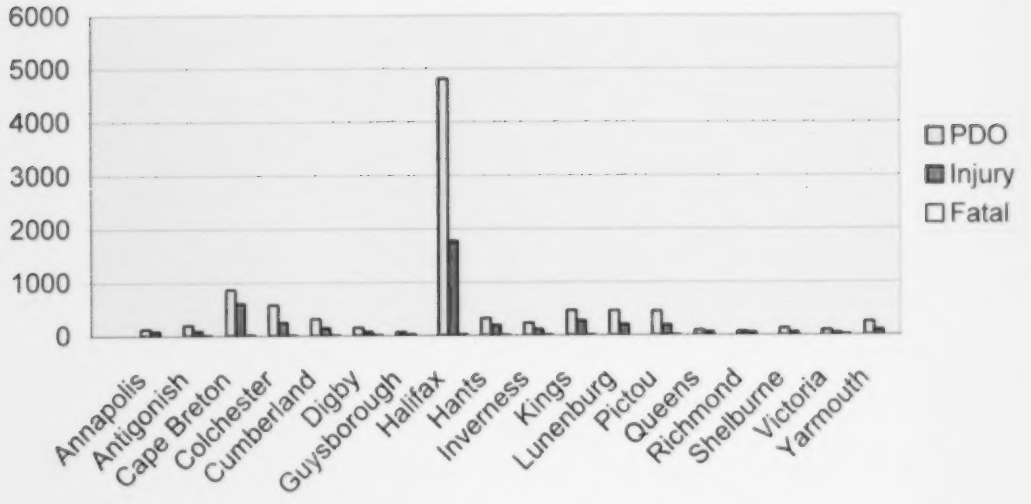

Colchester
5000
4804
Antigonish
Inverness
Victoria
Hants
Pictou
Cumberland
Baddeck
Sydney
Annapolis
Amherst
New Glasgow
Antigonish
Kings
Cape Breton
Port Hawkesbury
Truro
1770
Middleton
Digby
Digby
Halifax
Richmond
Guysborough
Bridgewater
Yarmouth
0
16
PDO
Injury
Fatal
Yarmouth
Shelburne
Queens
Lunenburg
Collision Data by County

Fig. 13

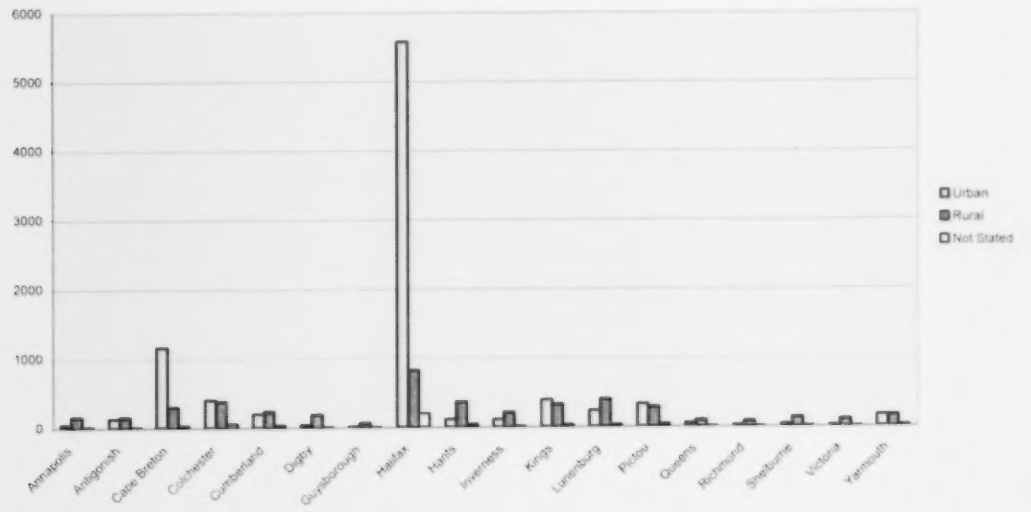
Collisions by County (Fig. 14)



Urban vs Rural by County

Urban roads are defined as metropolitan roads and streets, typically with a speed limit of 60 km/h or less. A rural road is a local street outside of a metropolitan area, and primary and secondary highways, typically where the speed limit exceeds 60 km/h. Of the 13,872 collisions in 2002, 40 per cent (5,571) occurred on urban roads in HRM and 8 per cent (1,153) on urban roads in CBRM. Figure 15 shows the urban/rural split for each county.

Collisions by Urban vs Rural & County (Fig. 15)



Construction Related Collisions

Of the 13,872 collisions in 2002, 349 (2.5 per cent) occurred on roads determined to be under construction or under repair as stated in the Unusual Road Conditions section on the collision report form. The construction zone did not necessarily play a part in these collisions.

A total of 18 collisions in 2002 listed the construction zone as a contributing factor to the collision. Two construction-related pedestrians (workers) were involved in collisions in 2002. The five-year history of these factors is shown in Figures 16 and 17.

Figure 16

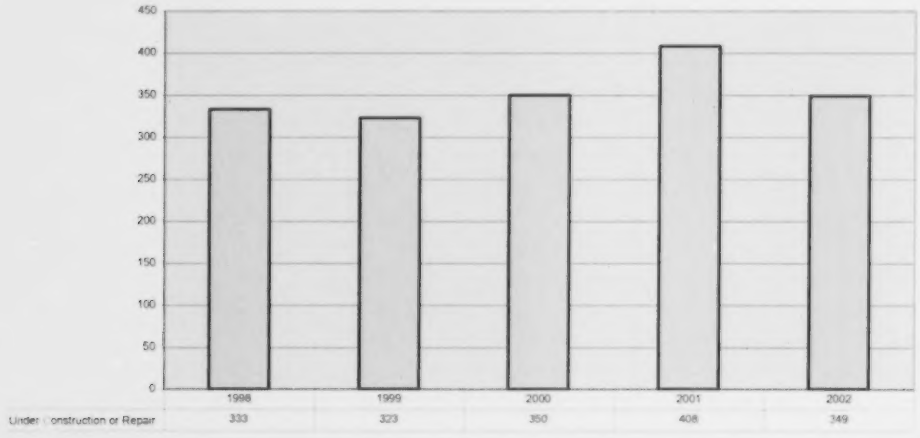
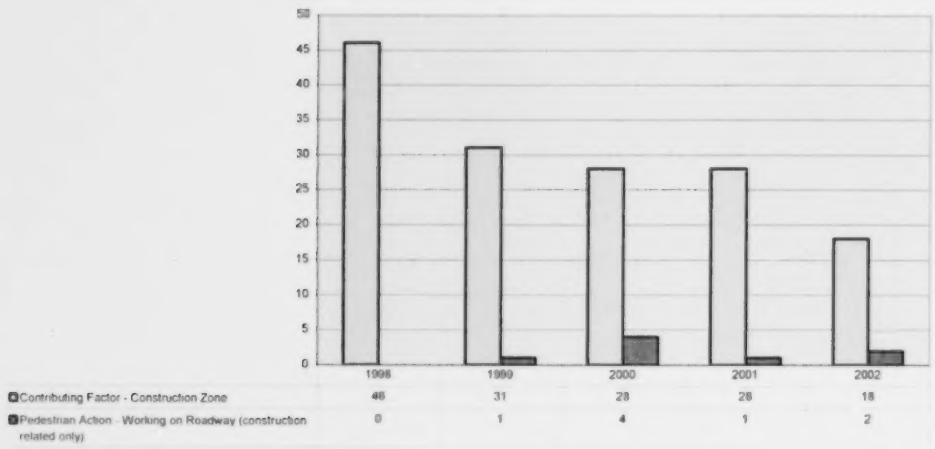


Figure 17



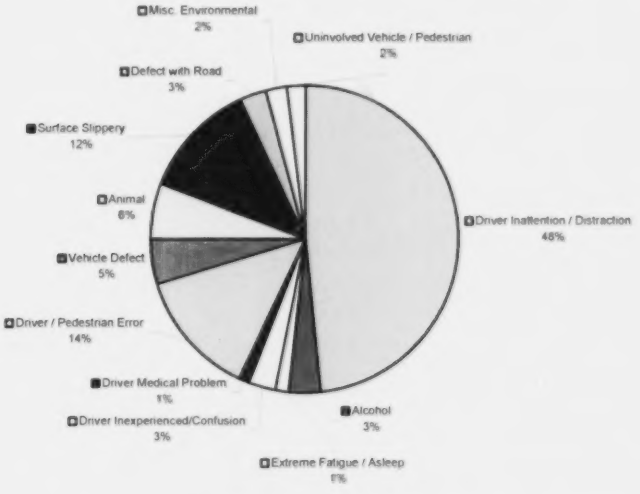
Contributing Factors

Each vehicle involved in a collision can be assigned up to 3 contributing factors from a list of 58 on the MV58A collision form. We analysed the main contributing factor for each vehicle involved in a traffic collision to determine causes and trends. To make the charts readable, we grouped the 58 factors from the collision form into 12 general categories. This information is presented below.

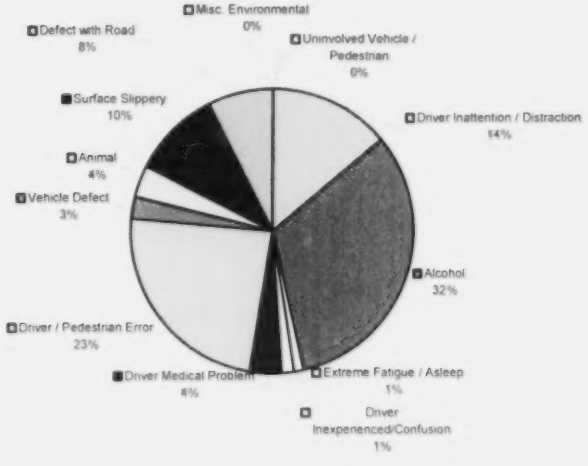
Figure 18 shows the first contributing factor for vehicles involved in all collisions in 2002. Most collisions are self-reported.

Figure 19 is a similar chart for fatal collisions only.

First Contributing Factor in All Collisions in 2002 (Fig. 18)



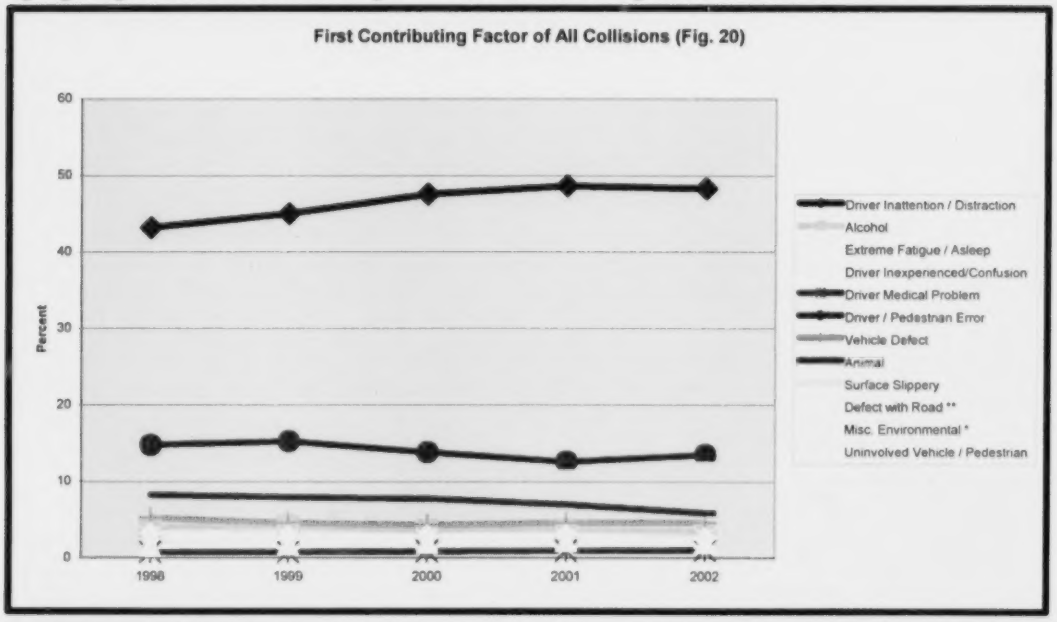
First Contributing Factor in Fatal Collisions in 2002 (Fig. 19)

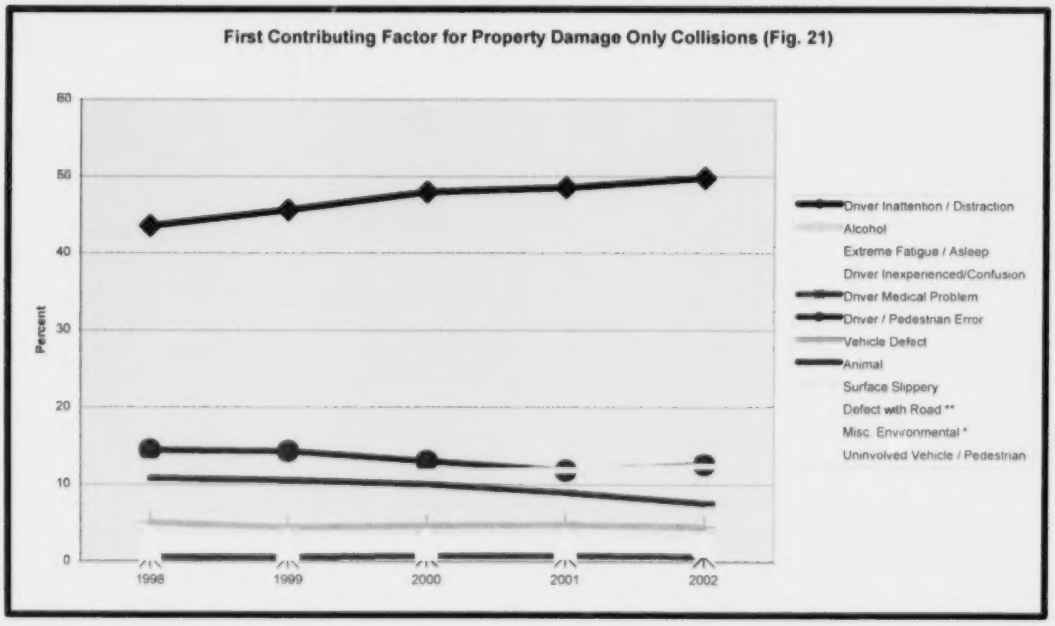


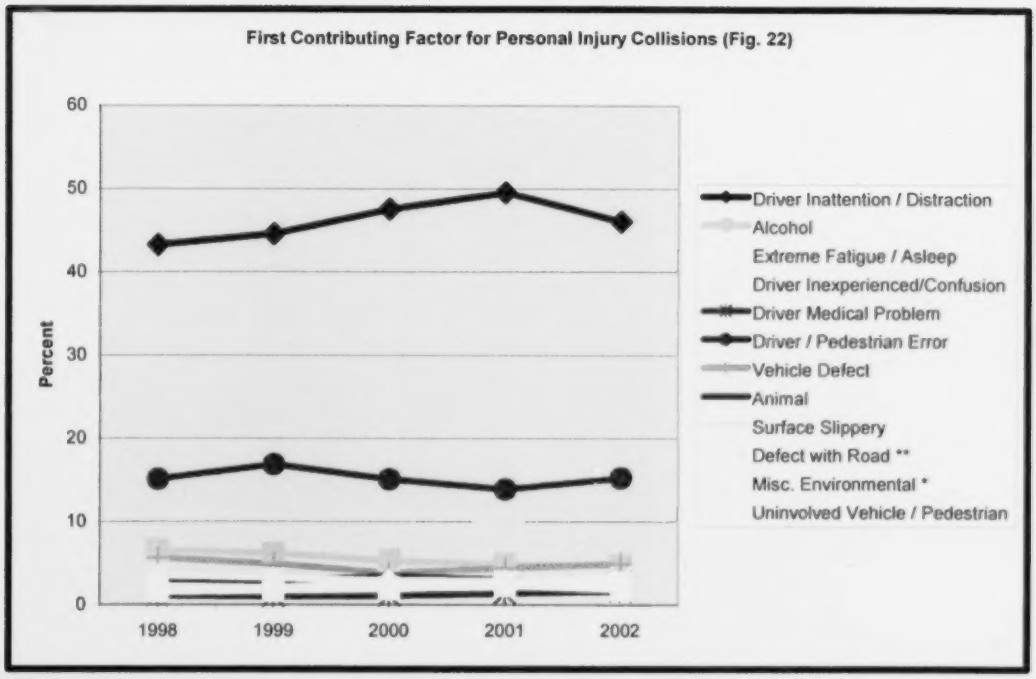
When we examine *all* collisions, the leading contributing factor by far is driver inattention/distraction (48 per cent). The next leading factor is driver and pedestrian error at 14 per cent, then slippery surface conditions at 12 per cent. Driver/pedestrian error involves drivers and pedestrians who have performed illegal or improper maneuvers prior to the collision.

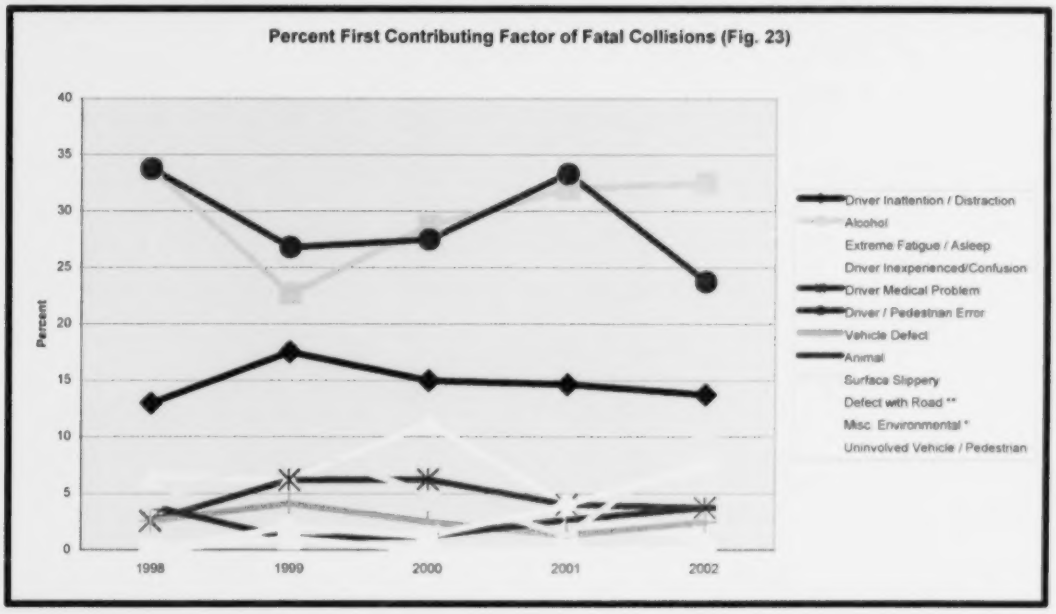
Contributing factors for *fatal* collisions in 2002 show somewhat different results. Alcohol involvement is the leading factor in fatal collisions in 2002 at 32 per cent. This is followed by driver/pedestrian error at 23 per cent and driver inattention/distraction at 14 per cent.

Similar results were obtained for the years 1998, 1999, 2000, and 2001. Five-year trend charts highlighting each of the contributing factors are shown in Figures 20 to 23 as follows:









The relative percentages and trends over the five years are very similar for All Collisions, Property Damage Only Collisions, and Personal Injury Collisions. They show that 45–50 per cent of vehicles involved in these collision types involve driver inattention/distraction. Driver/pedestrian error accounts for approximately 15 per cent over the five years for the same collision types.

The five-year trend of contributing factors for Fatal Collisions is very different. Alcohol involvement at over 30 per cent and driver/pedestrian error at a similar percentage are the leading contributing factors followed by driver inattention/distraction at about 15 per cent.

Crunching the Numbers

The report relies on statistics obtained from the Nova Scotia Collision Record Database. In Nova Scotia all collisions involving property damage over $1000, injuries or fatalities occurring on a public road as defined by the Motor Vehicle Act are required to be reported. The completed collision report forms (MV58A) are forwarded to Service Nova Scotia & Municipal Relations where they are entered into the database. This database is forwarded to TPW where it is edited and location information added.

The statistics quoted in this report are derived from queries made to the database as of December 2003. It is possible that additional data may be added to the database after this time as it is constantly being updated.

Additional Nova Scotia collision information is available on the TPW website:
http://www.gov.ns.ca/tran/Publications/publications.stm

A national perspective on collision information is available on the Transport Canada website:
http://www.tc.gc.ca/roadsafety/stats/menu.htm

For additional information contact:
Paul J. Smith
Road Safety Engineer
(902) 424-3134
smithpj@gov.ns.ca

Appendix A

Drivers Involved in Collisions per 100 Licensed Drivers by Age Group

	2000			2001			2002		
Age Group	Drivers in Collisions	Licensed Drivers	Rate	Drivers in Collisions	Licensed Drivers	Rate	Drivers in Collisions	Licensed Drivers	Rate
16-17	1038	14727	7.0	910	14535	6.3	877	10547	8.3
18-19	1162	18487	6.3	1044	18314	5.7	1080	18066	6.0
20-24	2633	49640	5.3	2444	49058	5.0	2296	49594	4.6
25-34	4534	114380	4.0	4295	113544	3.8	4000	110028	3.6
35-44	4885	146877	3.3	4656	146337	3.2	4256	140247	3.0
45-54	3599	128163	2.8	3565	132026	2.7	3442	134253	2.6
55-64	1948	80682	2.4	1930	92136	2.1	1952	96983	2.0
65-69	698	28726	2.4	675	30701	2.2	577	31250	1.8
70-74	515	22476	2.3	560	25065	2.2	469	24677	1.9
75-79	458	16681	2.7	355	18774	1.9	383	17867	2.1
80-84	255	9853	2.6	261	12895	2.0	264	11925	2.2
85-89	97	3834	2.5	90	5792	1.6	95	5100	1.9
90+	32	942	3.4	19	1719	1.1	22	1451	1.5
Total	**21854**	**635468**	**3.4**	**20804**	**660896**	**3.1**	**19713**	**651988**	**3.0**

Rate = # of drivers in collisions / # of licensed drivers * 100

Appendix B

Drivers Involved in Injury & Fatal Collisions per 100 Licensed Drivers by Age Group

	2000			2001			2002		
Age Group	Drivers in Inj & F Collisions	Licensed Drivers	Rate	Drivers in Inj & F Collisions	Licensed Drivers	Rate	Drivers in Inj & F Collisions	Licensed Drivers	Rate
16-17	373	14727	2.5	319	14535	2.2	295	10547	2.8
18-19	458	18487	2.5	398	18314	2.2	407	18066	2.3
20-24	1008	49640	2.0	814	49058	1.7	764	49594	1.5
25-34	1582	114380	1.4	1453	113544	1.3	1327	110028	1.2
35-44	1831	146877	1.2	1560	146337	1.1	1350	140247	1.0
45-54	1178	128163	0.9	1105	132026	0.8	1059	134253	0.8
55-64	609	80682	0.8	591	92136	0.6	547	96983	0.6
65-69	205	28726	0.7	193	30701	0.6	164	31250	0.5
70-74	157	22476	0.7	174	25065	0.7	131	24677	0.5
75-79	144	16681	0.9	85	18774	0.5	105	17867	0.6
80-84	84	9853	0.9	71	12895	0.6	67	11925	0.6
85-89	34	3834	0.9	32	5792	0.6	33	5100	0.6
90+	7	942	0.7	6	1719	0.3	8	1451	0.6
Total	**7670**	**635468**	**1.2**	**6801**	**660896**	**1.0**	**6257**	**651988**	**1.0**

Rate = # of drivers in injury & fatal collisions / # of licensed drivers * 100

Appendix C

Definitions

PDO - property damage only

Injury - any visible injury or complaint of pain

Minor Injury - no treatment required

Moderate Injury - treated and released from hospital

Major (serious) Injury - hospitalized

Fatal - death as a direct result of a collision within 30 days

Urban - metropolitan roads and streets and other urban areas; a speed limit of 60 km/h or less

Rural - primary and secondary highways, and local streets; a speed limit exceeding 60 km/h

SNS&MR - Service Nova Scotia and Municipal Relations

TPW - Nova Scotia Transportation & Public Works

HRM - Halifax Regional Municipality

CBRM - Cape Breton Regional Municipality